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CARNEGIE

Magazine



JEUNE FILLE EN BLEU

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October 1951

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*Inca Water Jug, on exhibit
at Carnegie Museum.*

THE EARLY PERUVIAN ECONOMY

The finely formed water jug illustrated here is typical of the highly-developed pottery-making art practiced by the Incas of ancient Peru.

This and other arts were a natural outgrowth of the Inca's way of life. Lands, grain, cattle—all were owned and controlled by the head of a local communal group. In spite of the development of art, the economy remained simple.

Without trade or industry, there was no need to coin money, and so no need for a banking system. Not until the Spaniards conquered the Incas and began to develop the country's riches did the need for money and a banking system become apparent.

So it has been throughout history. The development of coinage and banking naturally follows the commercial awakening of a country—banking practices becoming more highly developed as the economic needs of the country become more complex.

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4400 FORBES STREET, PITTSBURGH 13, PENNSYLVANIA

WEEKDAYS 10:00 A.M. TO 5:00 P.M.; TUESDAYS 10:00 A.M. TO 10:00 P.M.; SUNDAYS 2:00 TO 6:00 P.M.

"FRENCH PAINTING: 1100 TO 1900" AND "PITTSBURGH PORTRAIT" OPEN WEEKDAYS TO 10:00 P.M.,

OCTOBER 18 TO DECEMBER 2

CAFETERIA OPEN FOR VISITORS TO THE BUILDING

LUNCHEON 11:00 A.M. TO 2:00 P.M., WEEKDAYS

SNACK BAR: 2:00 TO 6:00 P.M., WEEKDAYS

DINNER 6:00 TO 8:00 P.M., TUESDAYS AND THURSDAYS BEGINNING OCTOBER 23

CARNEGIE LIBRARY OF PITTSBURGH

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SUNDAYS 2:00 TO 6:00 P.M., REFERENCE SERVICES ONLY

Institute and Library open to the public every day without charge

OCTOBER

*Bending above the spicy woods which blaze,
Arch skies so blue they flash, and hold the sun
Immeasurably far; the waters run
Too slow, so freighted are the river-ways
With gold of elms and birches from the maze
Of forests. Chestnuts, clicking one by one,
Escape from satin burs; her fringes done,
The gentian spreads them out in sunny days,
And, like late revelers at dawn, the chance
Of one sweet, mad, last hour, all things assail,
And, conquering, flush and spin; while, to enhance
The spell, by sunset door, wrapped in a veil
Of red and purple mists, the summer, pale,
Steals back alone for one more song and dance.*

—Helen Hunt Jackson

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JEUNE FILLE EN BLEU

Auguste Renoir's innocent and appealing little lady, painted in 1877, has been lent by *The Reader's Digest* for the exhibit FRENCH PAINTING: 1100-1900 which opens at the Institute on October 18. The painting is approximately 30 by 20 inches in size.

To quote, in this connection, from Germain Bazin's *Renoir* (Editions Albert Skira Paris): "Renoir does not turn Nature's pages as we would the pages of a dictionary. He lives with Nature. He has kept the innate sense of the natural, divine harmony between man and the universe. He belongs to the race of 'natural' men for whom 'problems' do not exist: for whom everything is simple because they have preserved the innocence of Creation."

BEQUESTS—In making a will, money left to Carnegie Institute, Carnegie Institute of Technology, or Carnegie Library of Pittsburgh should be covered by the following phrase: I do hereby give and bequeath to (Carnegie Institute) or (Carnegie Institute of Technology) or (Carnegie Library of Pittsburgh) in the City of Pittsburgh, Pennsylvania.....Dollars

MEMORIALS—Carnegie Institute is prepared to receive contributions given by friends in memory of deceased persons in lieu of floral tribute, and to notify the deceased's family of such gift. The amount of the contribution will not be specified unless requested by the donor.

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Calendar of Events

FOUNDER-PATRONS' DAY

The ambassador from the Republic of France, Henri Bonnet, will be the speaker in Music Hall on Thursday evening, October 18, in a program which will mark the fifty-fifth celebration of Founder-Patrons' Day at Carnegie Institute. A preview of FRENCH PAINTING: 1100-1900 in the art galleries will follow the address. Members of Carnegie Institute Society are receiving invitations for the evening.

FRENCH PAINTING: 1100-1900

A unique and fascinating exhibition, covering eight centuries of French painting, will take the place of the PITTSBURGH INTERNATIONAL at the Institute this autumn. Eighty private collectors and museums will lend the exhibits, many of which have never before been shown in America. The display, containing 171 paintings, drawings, and illuminated manuscripts, has been assembled by the Institute's new director of fine arts, Gordon Bailey Washburn.

FRENCH PAINTING: 1100-1900 will open on the third floor of the Institute the evening of October 18 and continue through December 2. The galleries will be open each weekday from 10:00 A.M. to 10:00 P.M., and from 2:00 to 6:00 P.M., Sundays.

THE STORY OF FRENCH PAINTING

The two concluding talks on "The Story of French Painting" by Gordon Bailey Washburn, in the series sponsored by The Garden Club of Allegheny County, will be held in Lecture Hall on succeeding Thursdays, October 4 and 11, at 3:30 P.M. Illustrated with slides, these talks are open to the public without charge.

Mr. Washburn will conduct two special tours of FRENCH PAINTING: 1100-1900 for members of Carnegie Institute Society during November. Watch for announcement of the dates.

CURRENT AMERICAN PRINTS, 1951

Lithographs, etchings, engravings, serigraphs, and woodcuts selected from the ninth annual Pennell exhibition of prints at the Library of Congress last summer, presenting current work of American artists, will be on display on the balcony of the Hall of Sculpture from October 18 through December 9.

PITTSBURGH PORTRAIT

Two hundred years of civic development culminating in an industrial metropolis with a new outlook are shown in a pictorial exhibit sponsored by the Museum and the Allegheny Conference on Community Development, with the co-operation of the Pittsburgh Regional Planning Association and the Pittsburgh Photographic Library at the University of Pittsburgh.

This extensive display of photographs, drawings, models, and planning studies will be of interest to visitors from out of town, old-time Pittsburghers, and youngsters learning to know their own city.

From October 18 to December 2, PITTSBURGH PORTRAIT will be open weekdays until 10:00 P.M.

NATIONAL LIBRARY DAY

October 4, which marks the founding of the American Library Association in Philadelphia in 1876, will be celebrated in Pittsburgh with special exhibits at the Library.

SUNDAY ORGAN RECITALS

Marshall Bidwell will present his weekly hour of music on the great organ in Carnegie Music Hall each Sunday at four o'clock, beginning October 7. The recitals are sponsored by the Arbuckle-Jamison Foundation.

Dr. Bidwell's program October 7 will include compositions of Walond, Mozart, Corelli, Bach, Wagner, Poldini, Khachaturian, Kern, and Lecuona.

On October 21 and 28 the Sunday programs will feature French compositions. The composers will include Boellman, Couperin, d'Aquin, Debussy, Dupré, Charpentier, Corelli, Bizet, Guilman, Massenet, Mulet, Pierné, Jacob, Saint-Saëns, Thomas, Vienne, and Widor.

TUESDAY EVENING LECTURE SERIES

Music Hall, 8:15 P.M.

Admission only by
Carnegie Institute Society card

October 23—HOLIDAY IN SWITZERLAND

Robert Friars will take you with colored moving pictures to visit the remarkable Swiss people and their beautiful country.

October 28 (Sunday, 2:30 P.M., Lecture Hall)—

NINETEENTH-CENTURY FRENCH PAINTING

John Walker, the chief curator of paintings at the National Gallery of Art in Washington, and a native Pittsburgher, will give an illustrated talk relating to the fall art exhibit at the Institute.

October 30—THE GENIUS OF FRANCE

Gordon Bailey Washburn, the new director of fine arts at the Institute, who has assembled FRENCH PAINTING: 1100-1900, will discuss the exhibit.

CLASSES FOR ADULTS

Art, crafts, and natural history classes for adults open at the Institute the first week of October, under sponsorship of the Division of Education.

CLASSES FOR CHILDREN

The three Saturday art classes for children at the Institute sponsored by the Division of Education opened September 15. These children are selected for marked ability in art and come from the public, parochial, and private schools of Allegheny County. The classes are the Tam O'Shanter's, a drawing class for ten to twelve year olds, meeting at 9:00 A.M., in Music Hall; the Palettes (morning section), a painting class for thirteen to fifteen year olds who have had three years as Tam O'Shanter's, meeting at 9:00 A.M., in Lecture Hall; and the Palettes (afternoon section), a sketching and painting class for other thirteen to fifteen year olds, meeting at 1:30 P.M., in Lecture Hall. There was a registration of 1,255 boys and girls the opening day.

The Saturday study groups in natural history and the Saturday nature moving pictures will open in November.

CREATIVE ART CLASS

A new class for children is announced on page 262.

STORY HOUR

Each Saturday at 2:00 P.M., stories for school children are told in the Boys and Girls Room at the Library.



SYMBOL OF SUPERIOR QUALITY...

For 68 years the name "Pittsburgh Plate Glass Company" has been the symbol of quality.

To the housewife seeking a quart of Wallhide paint or the industrialist wanting a tank car of liquid chlorine the letters "PPG" signify efficient, prompt and courteous treatment.

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EIGHT CENTURIES OF FRENCH PAINTING

BY GORDON BAILEY WASHBURN



PERHAPS the most practical way of obtaining a view of eight centuries of French painting is to begin at the nearest point and move backward. By this means we may start off with the best-known material and proceed to the least familiar. The several famous works by Gauguin (1848-1903) which are included in the exhibition FRENCH PAINTING: 1100-1900 at Carnegie Institute provide excellent points of departure, offering, as they do, the clearest evidence of that revolt which split the century and introduced our so-called "modern" movement in art.

In Gauguin's *Yellow Christ* we plainly see his denial of the naturalistic kind of picture which was the ideal of the Impressionists, as well as of all optical illusionism in art. For Gauguin, a picture was basically a two-dimensional symbol of experience, not a copy or a paraphrase of a three-dimensional world. In his writings to his friends as well as in his paintings, Gauguin attacked the Hellenistic conception of imagery—that of depicting physical objects existing in continuous space—favoring instead mental images disposed within a limited and definite pictorial area. We must never suppose, he declared, when we look at a picture, that we are looking at the external world as if through the framework of a window. We must know at once, through the bright and unnatural colors, the depthless pattern and the distortion of "real" objects, that we are looking at a human experience, made visible in sign and symbol. A picture must stand up on its own feet as a spiritual instrument for evoking emotional response rather than as a dubious imitation of external appearances. It is a projection, not of the apish memory, but of the creative mind.

This was not precisely novel as a point of view, but Gauguin's exotic and spectacular nature, together with his spirited denunciation of the prevailing ideals of the

society in which he lived, gave courage to others who were ready to revolt in his train. Such artists felt that all naturalistic painters, such as those whom the State honored with medals and prizes, were victims of a widespread scientific materialism which must be combated as inimical to life. Man's spiritual life, his innate humanity, had been desecrated by the ideal of the photographic picture, while the camera itself (invented c. 1839) was proof enough of the purely mechanistic nature of a scientific naturalism. A truer reality lay in our human hearts and spirits than could be caught by those experts at sleight-of-hand who imitated the external world.

In Gauguin's art, we are first fully aware of that modern conflict, amounting eventually to a state of war, between the claims of objective versus subjective experience. Deep and indefinite space and rounded modeling are all aspects of a transient and deceptive world in flux; a flattened and contained space, born of the mind, avoids transient effects and encompasses only the eternal. It is what is invisible within man's understanding that must be materialized.

In one way or another, all the Post-Impressionists were anti-Impressionists, or at any rate anxious to correct the limited point of view of those who had painted fragments of an endlessly fluctuating world of appearances. Cézanne (1839-1906), the greatest of these reformers, did not wish to deny the truth of a dynamic and ever changing nature, but he was de-

Mr. Washburn's discussion relative to FRENCH PAINTING: 1100-1900, which opens at the Institute October 18 and will continue through December 2, is the first of three he is planning for CARNEGIE MAGAZINE. As the new director of fine arts, Mr. Washburn has assembled this exhibit during his first year in Pittsburgh.

He came to Carnegie Institute after a year abroad under a Guggenheim fellowship in preparation of a book on modern movements in art. Previously Mr. Washburn had been director of the Museum of Art at the Rhode Island School of Design, and before that at the Albright Art Gallery in Buffalo. He is a graduate of Williams College and of the Fogg Art Museum course at Harvard University.



TAHITIAN LANDSCAPE BY PAUL GAUGUIN (1891)
Lent by The Minneapolis Institute of Arts

termed to introduce the contradictory truth of a nature that is constant and timeless. He believed that the picture itself must be an artifice, a thing in itself, which is created on a level parallel to the visible world and not subject to mere comparison with it. The picture must be a self-supporting organism, as independent of dictation from nature's external forms as a house or a song.

Nature, Cézanne often declared, is the great Source, but man, himself a part of her being, must reconcile within any creative work his own awareness of her paradoxical character. He must recognize the natural demands both of eye-sight and insight; both of sense and sensibility. Cézanne's art is therefore his testament to human understanding. This attitude is clearly shown in the pictorial "hand-writing" of his *La Montagne Sainte-Victoire*, in which each stroke supports the other, as words are welded into visual metaphors in a poem. Although he used an actual mountain near Aix-en-Provence as his model or inspiration, the mountain is transformed into an idea; one that combines Cézanne's sense of a momentary vista with his experience of an external order of things.

In one way there was nothing new in this; but since every age offers a different climate of thought as well as a different pattern of forces, the results are always unique. So too are its artists, as individual "seers." The nineteenth century had seen an intense development of the Industrial Revolution and had gloried in the idea of the mastery of the world through scientific investigation into the hidden laws of nature. Mechanistic solutions were ideal ones; and even the Impressionists had studied appearances, like specialized observers, to arrest if possible unrecorded aspects of physical vision. Shadows became blue in their pictures, and objects were seen to merge with each other in accordance with objective experience.

One Post-Impressionist, Georges Seurat (1859-91), studied these optical effects still further, attempting to correlate physical vision and emotional response in a pictorial system that would give the artist exact control over the reactions of the observer. Fortunately Seurat's poetic instincts were powerful enough to survive his theoretical interests, his genius suffering only minor impairment by reason of a preoccupation with his special system. Here in our exhibition we see the com-

pleted study for *The Bathers*, produced before he had developed his full pointillist method of painting in broken colors. His essentially mystical sensibility cannot be seen to greater advantage than in this glowing sketch from the collection of Dr. and Mrs. David M. Levy.

Like Degas and Cézanne, Renoir (1841-1919) had belonged to the Impressionist group, and we see him in this survey both as an Impressionist and as a Post-Impressionist. His *San Marco*, like his *Jeune Fille en Bleu*, is the recording of a transi-

tians. Each sought his own Garden of Eden—an undivided world—in some half-lost culture of the past.

Nothing could have been more different from this sensuous classicism of Renoir than the Neo-Classicism which Louis David (1748-1825) had introduced just before the start of the nineteenth century. Both had withdrawn from the liquid spontaneity of their earlier styles, as we may likewise see in David's *Hector Taking Leave of Priam* by comparing it to his earlier Desmays portrait. But here the



LA MORT DU COCHON BY JEAN FRANÇOIS MILLET (c. 1870)

Lent by E. S. Burke, Jr., Cleveland

ent delight, projected in instinctive and spontaneous terms. It is a marvel of luminosity. In his *Seated Nude*, on the other hand, he has developed the more noble and meditative style of his later years, a period once mistakenly deprecated by his admirers. This more abstract approach may now be seen as another significant aspect of that Post-Impressionist search for permanent and stable elements in a world of shifting lights and values. In Renoir's thought, the Greeks had once felt and formulated this desirable wholeness of mind and of body; and so he turned to them for inspiration, just as Gauguin was turning to the Orientals and the Egyp-

likeness ends. David had wished to inaugurate a didactic art of high moral content that might be expressed in the appropriate Republican terms of Plutarch's time, an ambition far removed from Renoir's pagan pantheism.

David's forceful example, like that of his successor Ingres (1780-1867), led to a whole academy of reconstructed pasts, whether Homeric, Biblical, medieval, or mythical. He himself, as Sterling points out, was a superb Romantic realist. But his example was disastrous. Some will recollect—without being reminded within the exhibition itself—the paintings of Delaroche, Cabanel or Carolus-Duran,

Alphonse Legros or Alma-Tadema. To appreciate fully the truly creative artists of the century, the position of these painters within the Davidian framework of a popular state-supported school of academicians must be remembered.

Not even the brilliant genius of Delacroix (1798-1863) could wholly escape literary illustration, as here evidenced by the *Combat between the Giaour and the Pasha*, inspired by a poem by Byron. But Delacroix's imagination transfigured the mere illustration of a tale from literature, as Rembrandt's had recreated his Bible stories. A new concept was formulated, in coloristic terms, that can now delight us without any dependence upon the story. Like Gauguin, Delacroix is not always able to heat his exotic elixir without curdling it, yet it is a rich and magical potion at best. As with his older romantic rival, J. A. D. Ingres, there was nothing literal about his interpretations of an oriental world. Ingres' sharp linear style may have been at an opposite pole from Delacroix's incipient Impressionism, with its phosphorescent tangle of colored threads; but each artist distorted natural vision for the sake of expressive imagery, as instinctively as Picasso or Soutine would distort it in our day.

Courbet likewise (1819-77) though dedicated to the world of commonplace sights—such as the marriage preparations for a village bride—was a master of transfiguration. Here he is seen in a great unfinished masterpiece from the Smith College Museum of Art. Even in his completed canvases, however, we are not concerned with his literal



VIEW OF ROME BY J. B. C. COROT (c. 1826-7)

Lent by the California Palace of the Legion of Honor, San Francisco

realism. Though credited as a leader of the Realist School, his realism was more spiritual than optical, and he expressed his sense of wonder and delight in everyday things with a dark orchestration of tones that is as abstract as are the deep chords of Saint-Saëns when drawn from the organ.

Abstractionists in our day complain of the impurities in nineteenth-century painting, and they have some ground to stand on when they criticize members of the Barbizon School such as Jean François Millet (1814-75). His sentimental descriptiveness and heavy piety were at times destructive to his artistry. But at his richest and best, as in *La Mort du Coq* from the Burke collection, his great talent is amply apparent. Some have thought that it is expressed most successfully in his



THE BATHERS BY GEORGES SEURAT (1883)

Lent by Dr. and Mrs. David M. Levy, New York City

prints and drawings, as in the little *Peasant Harvest Scene* from the collection of Mrs. Herbert N. Straus, here exhibited with the drawings. He was not a notable colorist. Yet one talent need not necessarily exclude another, as is shown in the work of both Daumier and Degas. Daumier (1808-79) worked most of his life in black and white, particularly as a lithographer, but, having more time in his later years, began to develop his painting. In *The Horsemen* from the Museum of Fine Arts, Boston, we see that though paint is not an accustomed medium, color is his natural element. He had always been a colorist, even in black and white, a master of tonal expression. The color, radiant and harmonious, is lifted in *The Horsemen* into a virile and romantic vision, wild and limitless.

So it was with Corot (1796-1875). But Corot used oils, working comparatively little in black and white, and often sketching his compositions in color at the roadside. Until recent years, his figure studies were held in minor esteem, but they have now been recognized as among his greatest works. *La Jeune Grecque*, painted in 1868-70, exhibits the same blond southern light as his *View of Rome* though it is more than forty years later. Corot's classical temperament, even, measured, and serene, was inseparably welded to his romantic devotion to natural beauties. The pantheism of the nineteenth century, which placed landscape above all other subjects in art, is here most perfectly expressed.

At best, Corot's contemplative art, which shunned all extremes, achieves that equilibrium between conceptual and sensuous values which was the goal of the later Post-Impressionists. As with Cézanne, Van Gogh, and Renoir at a later time, Corot learned to detach both himself and the observer from a literal reproduction of visual effects by working in the bright southland. In Provence and Italy he could see things in larger and more general terms, broadly transfiguring objects into coloristic values, as the critic Venturi has pointed out. Like them he was able to find a classical order and permanence within the realistic tradition; that is to say, in direct contact with the natural scene. Thus he could paint recognizable things, whether St. Peter's dome or a Greek girl,

without limiting himself to mere description. He achieved a double image, by which we see the world in two aspects simultaneously, both concretely and abstractly; both in terms that are momentary and in those that endure. A paradox has been solved within the image, the paradox of human vision within its broadest meaning.

CREATIVE ART CLASS

*The world is so full of a number of things
I'm sure we should all be as happy as kings.*

To the seven and eight year olds in the Creative Art Class, Carnegie Institute, with its fascinating collections to stimulate imagination, to arouse and even at times to satisfy so-called insatiable curiosity, is "the world" of Robert Louis Stevenson's couplet. It would not be easy to decide what exhibit charms these young patrons most; but a constant in popularity is their own studio with the shiny easels that will stretch or shrink to just the proper size for each little artist. Here with much paint and many brushes they are "happy as kings" on Saturday mornings.

Admission to the Creative Art Class, for which only children of Carnegie Institute Society members are eligible, is on the basis of interest and a desire to draw and paint. As in the Tam O'Shanter and Palette classes, where admission is dependent on aptitude, the over-all objectives are: to cultivate the child's ability to choose and discriminate; to encourage him to look, to see, and to remember; to help him build an art vocabulary; to give him many art experiences through Carnegie Institute's endless resources of science, literature, music, and art.

The fall term will open Saturday, October 6, at 10:00 A.M., with Joseph C. Fitzpatrick and Ann Jones Matthews as instructors. The group number will be limited to twenty-five and the age bracket to the seven and eight year olds.

Registrations, acceptable in order of application, may be made on Tuesday, October 2, or Wednesday, October 3, from three to five o'clock. The registration fee of \$5.00 will cover cost of supplies and use of equipment as well as instruction during the ten-week course. For further information contact Margaret M. Lee of the Division of Education at the Institute.

HITTING THE LINE

By STANLEY R. MARCH



MANY colleges and universities are caught in an intercollegiate athletic dilemma and they don't know what to do about it. Prompted by the recent basketball bribes and cheating scandals, a re-scrutiny of athletic policies may be in order in many quarters.

Why won't these institutions rededicate themselves to the purpose for which they were established—education of our youth—instead of trying to compete with the Steelers or the Harlem Globe Trotters in providing a spectacle for the entertainment of the public? If they did, intercollegiate athletics would fall into its proper place in the over-all picture.

Carnegie Institute of Technology found an answer more than a decade ago in playing football for the students and for those who have a natural interest in its teams—alumni and friends. Further, it has part-time coaches who coach pretty much for the fun of it. And Carnegie plays schools near its own educational and athletic level. Last year the Tartans dumped seven foes while losing to just one.

Student morale is high. The football team is one with verve and cleverness. The players themselves have an exciting, good time. The athletic policy adopted during the late Robert E. Doherty's administration and now adhered to under President J. C. Warner is proving its worth. In athletics, Carnegie was once as "big-time" as a college could be. Its football elevens, nationally feared, cultivated a habit of upsetting such titans as Notre Dame and Pitt.

Tech recruited and subsidized its athletes, and made financial and some educational concessions.

However, during the '30s Carnegie found itself spun in a vicious athletic

swirl. Academic requirements and demands made it impossible to maintain topnotch teams. Carnegie discovered that it would lose money consistently and heavily in any program of "big-time" football. It realistically took stock in 1937 and toted up a \$148,000 athletic debt resulting from written-off "scholarships" and other concessions to athletes.

What was done by Carnegie? Described by Dr. Doherty in his 1936-37 President's Report, the athletic policy is this: "... Carnegie Institute of Technology is, before all else, an educational institution. . . We are not interested in providing public entertainment as a business or in publicity that might come from extraordinary athletic prowess. . . We are adamant in maintaining high standards in scholastic and athletic eligibility and in admission requirements, and in preventing the use of athletic or any other of the institution's funds to pay or support in any way our athletes because they are athletes. . ."

He emphasized that this was not a drive toward simon-pure athletics. If an alumnus wanted to help a scholastically eligible student through college—whether prompted by the student's attributes as an athlete, musician, or scholar—"no convincing reason appears why he should not do so."

The policy states further that "after the requirements of the educational program



Pittsburgh Sun-Telegraph

CELEBRATING A FOOTBALL VICTORY AT CARNEGIE TECH, WITH THE LATE DR. DOHERTY AND PRESIDENT WARNER IN THE MIDST

ave been met fully by both the school and the students, the demands of intercollegiate athletics will be met to the best of the abilities of all concerned. . . . It must be understood that if any compromise must be made, intercollegiate athletics—and not the educational program—must give way. . . .”

What resulted from this policy? During the transition years following the adoption of the new policy Carnegie continued big-time football. In fact, in 1938 Carnegie became Eastern college champion, Coach Bill Kern was acclaimed “Coach of the Year,” and the Tartans battled Texas Christian in the Sugar Bowl.

However, in 1940 small colleges began to replace the behemoths on the Plaid schedule. Then the war pushed football out of the picture and postponed a Carnegie climax.

When Tech resumed football in 1946, it seemed the new policy was destined to fail. Tartan gridders that season did not score a point, even though small colleges now dotted the schedule. And the painful situation mounted in intensity as Carnegie failed to win in twenty-four straight games.

The climax came in 1948 when students staged demonstrations and hanged Dr. Doherty in effigy.

Despite the fact that his policy seemed to be exploding, Dr. Doherty refused to surrender. He maintained, “There is nothing wrong with our policy that a few victories can’t cure.”

Events have proved him right. Last year Carnegie vindicated itself and his policy by capturing all but one game.

Students ceased to grumble, and more of them gave thought to trying out for the team. Some of the former foes of the policy now acclaimed it.

Harry Keck, *Pittsburgh Sun-Telegraph*

Mr. March has been director of public relations at Carnegie Institute of Technology since 1946 and also directs the Carnegie Press. He knows both sides of the collegiate athletics picture, having spent five years rounding up football talent for a large eastern university some seventeen years ago. Three sons approaching college age help influence his dislike for overemphasis on college athletics today. He did administrative work at one of the colonial colleges and came to Pittsburgh in 1945 to organize the George Westinghouse Centennial. His undergraduate study was at University of Buffalo and Rutgers University.

sports editor, expressed it this way:

“Dr. Robert E. Doherty . . . was unique among college presidents in that he knocked the hypocrisy out of athletics at his institution and kept it out. . . . Dr. Doherty fearlessly restored athletics at his school to their original purpose, recreation for the student body rather than a public spectacle. . . . With him, the classroom came first, the athletic field and gymnasium second.”

Athletics at Carnegie are administered by a department of athletics with a budget stemming from the same source as that of chemistry, drama, or any other Carnegie department. Out of the athletic budget comes expenses for both intercollegiate and intramural sports.

If football gate receipts help pay the freight, that’s all to the good. But if they don’t—and they haven’t in recent years—football and other Carnegie sports do not suffer. For there is no long list of scholarships to cut, no high-priced coaching staff to let go, nor is there an expensive stadium to pay for.

All Carnegie’s athletes are, as the policy says they should be, “bona fide students” who meet the same requirements as any other student. A check of the 1950 Tartans showed the team’s scholastic average to be identical to the all-school mark.

Carnegie athletes can receive tuition help through what is called the Steffen Fund. Alumni who want to aid athletes must do so through this scholarship plan. Currently, a total of eighteen athletes in football and basketball receive help toward tuition by means of this fund.

It is ironic that because of the existence of this fund and Dr. Doherty’s complete honesty in reporting it as a fund for scholarships for athletes, Carnegie resigned from the National Collegiate Athletic Association just prior to the war.

All Carnegie’s football coaches are part-time and follow their own professions. Head coach Eddie Baker is a full-time practicing dentist. Assistant coach Eddie Hirshberg is president of a radio station, construction company, and a photographic studio. Assistant coach Al Irwin is a lumber salesman. Assistant coach Walter Burns heads a wholesale grocery firm.

Because Carnegie has now developed

(Turn to page 280)

I LIKE ARABS

By JOHN R. SIMPSON



THE old timers had warned me. "Don't fool yourself," they said. "Those Arabs are tough customers. They'd as soon shoot you as look at you."

This was not the best of news for a neophyte archeologist about to take charge of his first excavation with a task force of ninety-four Arab workmen. Still, it would have taken more than that to keep me away from the site we called Timna Temple I. For seven weeks while I finished my original assignment as a member of the American Foundation's base camp crew, I'd been looking forward to digging that ancient temple out from under its two thousand years' mask of sand. It occupied the center of the 60-acre mound that had once been Timna, capital of the ancient kingdom of Qataban, and despite its great size—165 feet long, 75 feet wide, and 21 feet high—it was almost engulfed by debris. Our main job was to clear all this away and record the features and specimens revealed.

The great day finally came on February 25, 1951, a day I won't forget as long as I live. Burdened with the tools I thought all archeologists should have, I went out to the site with Jim Swauger. No sooner had we mounted to the temple wall than a stocky man in a faded blue plaid jacket climbed out of a trench, saluted Jim and me with a *Salaam aleikum* (peace be with you), placed his left index finger in his left ear, and began to chant in a loud voice in Arabic. His voice grew louder and faster, and the rest of the workmen, watching him, began to hop up and down as at a signal and to wave their hoes. Suddenly they all screamed and danced in frenzy and swung those wicked hoes around their heads. I glanced behind me, measured the distance from me to the headquarters house, noted the obstacles I'd have to clear to get there, and estimated the time it would take me to decamp before someone split my skull with a hoe. Then the Arabs burst into song. What a relief! I

learned later that the yelling was the Beihani greeting, but all I could picture was a group of vultures preening their wings and whining gleefully over a white skeleton which would have been mine.

After that experience and its explanation, I relaxed. The Arabs noticed that I enjoyed their singing, so when I came on the site they would sing almost all the time. They took pleasure in the fact that I remembered their names, and when they saw I was trying to learn Arabic, they were as pleased as I was when I learned a new phrase. They seemed to look on us as good friends, and in the morning when Jim and I came to the site, we had to shake hands all around. I soon felt like a candidate for office.

The most excitement we had on the site was the day the rains came. In the afternoon huge clouds began to form over the mountains to the south, and the workers all told me it would rain before the day was over. They grew quite excited, for to them rain is the most important thing in the world. Abdulla Jamoy and Feid el



Hegel began to sing and dance, waving their knives. As the basket boys wound up the paths to the dirt piles, Abdulla and Feid would dance behind them, then cut in front to lead them back to their respective hoe men. By the end of the day the place was a bedlam, with everyone but me and Mohammed Mohammed Ali esh Shaghal, my Egyptian labor foreman, singing and dancing and waving hoes and baskets and knives to welcome the rain. There wasn't much work being done but everyone was having a fine time.

The rain brought great floods which swept into the low wadi or stream-bed area with force enough to break some of the dikes built there to control gentler floods. One day I was told by some of the men at the site that Ahamed Shemsi and seven others who worked for me had been drowned while trying to ford one of the swollen wadis. Esh Shaghal and I sat down to try to figure out what to do with their pay and how to get replacements, when we heard singing in the distance. Esh Shaghal and I waited to see what this meant. Presently about twenty Beihanis came marching toward the temple singing for dear life, and in the middle, shouting as loud as anyone else, was the supposed dead man, Ahamed Shemsi. I looked at the rest of them and found my other seven. When I questioned them, I found they had gone to repair dikes for one of the local rulers and just hadn't bothered to tell me. The other Arabs knew it, of course, but it was their idea of a good joke to let me think Shemsi had been drowned.

Without the foremen, we could not have accomplished as much as we did, nor could we have handled the men half so well. The foremen were all Egyptians, known as "Guftis" because they come from a town named Guft in lower Egypt. All are trained archeological workmen who have done little but archeological digging since they

were little boys of ten or so carrying baskets of earth to dump piles at sites all over the Near East. They could excavate, repair, handle workmen, pack specimens, do anything but keep records and map. There were six with us. The head Gufti, Raise Ghilani Suleiman Abd el Hakim, had worked chiefly at Luxor. The word "Raise," which corresponds more or less to our "Captain," was added to his name because he was the leader of the Egyptians; the others we called "Raise" when they worked separately from Ghilani at a site. Azab Mohammed Suleiman and Shatir Ahmed Mohammed also had worked mostly at Luxor. Esh Shaghal, his brother, Ahmed Mohammed Ali, and Bahjat Hassan Mohammed had had experience in Lebanon, the Sudan, and Egypt.

My "own" Gufti, esh Shaghal, was a lovable old cuss. When the temple digging began, he became very confused about what the Americans wanted done, for he knew no English, and we knew no Arabic. In his anxiety to please us he became tangled in all sorts of weird schemes to forward the work and could be found almost any time screaming at the Arabs to get them to do something opposite to our desires.

Almost everything he did turned out to be comical. One day, for example, the basket boys were playing too many games on their trips to the dump piles and the men weren't working any too hard. Esh Shaghal began to exert his authority by



TWO GUFTIS, EXPERIENCED IN ARCHEOLOGY

Jack Simpson hopes to complete his undergraduate work at the University of Pittsburgh this year, Uncle Sam willing. He is majoring in history. From last November to May he spent in South Arabia, along with James L. Swauger, the Museum's curator of man, making archeological excavations with the American Foundation for the Study of Man. Mr. Simpson's title at Carnegie Museum, where he has done part-time work the past three years, is assistant field archeologist.



ARAB BASKET BOYS WINDING UP THE PATH TO THE DIRT PILES

running from man to man saying urgently, but rather quietly, "*Sbughl, sbughl*" (work, work). This had no effect and after a bit he grew excited and hopped up and down, his skirt flapping, and yelled "*SHUGHL*" as loud as he could. But it didn't come out right. Instead of his voice carrying authority, it broke in the middle and sounded like that of a camel protesting at loading time. All the Arabs halted what little work they were doing and roared with delight.

This hurt the dignity of Mohammed Mohammed Ali esh Shaghal, Raise of the Temple, and he grew so angry he didn't hear me caution him to take it easy. He grabbed a stick and began running around taking swings at the basket boys and men. One of the men—they are catlike in action—easily pulled the stick from esh Shaghal's hand. At the same time he slid his other hand down to rest comfortably on the hilt of his knife and grinned at the poor Gufti. It was time for me to step in and iron things out. Poor Mohammed was more confused than ever at this show of resistance, but he realized that his hitting people with sticks was a serious matter in Beihan, and he was constrained to com-

promise reluctantly.

He tried to stay out of trouble but was trying so hard that he couldn't, and he got into a jam about every other day. The workmen really liked him very much and showed it by teasing him. He was a very good workman himself, and when I finished the temple and moved to Hajar bin Humeid to work with Don Dragoo and Gus Van Beek, he went along since he was "my" Gufti, and we found him of great help since he was an expert at the difficult task of working out mud brick walls.

With the aid of the Guftis, the archeologists had to be just about everything at the sites. In addition to being mappers, super-foremen, and photographers, we were doctors and counselors. The Arabs were always getting cut or bruised and always arguing with their fellow workers. They came to us when they were sick or were in trouble with their rulers. We couldn't help trying to do what we could for them. They were hard-working, simple people with only one thought in mind, and that was to make enough money working to be able to purchase a little food and clothing. I found them a fine, just group of people who loved to laugh and sing and be friendly. When Dragoo and I said good-by to the workers at Hajar bin Humeid on the last day, quite a few of those "bloodthirsty, crafty Arab warriors" broke down and cried. They may be the "thieving, treacherous people," I was told they were, but I just can't believe it. I liked them.

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CONSIDER THE LILIES

By O. E. JENNINGS
Director Emeritus, Carnegie Museum



Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, that even Solomon in all his glory was not arrayed like one of these. (Matthew 6:28-30)

Were these real lilies? Authorities differ. The Bible took its present form from Greek and Hebrew texts evidently compiled from material that had come down through several generations by word of mouth. The translators and scribes were evidently not botanists, and errors easily crept in, just as has happened with plants in our own country. For example, when our early settlers saw *Kalmia*, the Pennsylvania state flower, growing mostly in the mountains and with laurel-like leaves, they quite naturally called it the mountain laurel, although it has no relationship to the real laurels.

The identification of the plants of the Bible has been the subject of many investigations, based partly on the wording of the texts, partly on architectural ornamentations and archeological discoveries, and in no small part on the study of the plants at present found growing in Biblical lands. The flora of these lands is more tropical than ours, but it apparently consists of about two thousand species, nearly as many as we have in western Pennsylvania. H. N. Moldenke, of the New York Botanical Garden, our best authority on this subject, believes that more than two hundred of the plants mentioned in the Bible are now identifiable.

What, then, were the "lilies of the field"? The best authorities say they were the poppy anemone (*Anemone coronaria*) which grows in profusion in some of the fields of Palestine, with flowers two inches



POPPY ANEMONE
(*Anemone coronaria*)

across and in colors of white, blue, gold, or scarlet. A meadow of these might well outclass the colors of the raiment of Solomon in all his glory. This anemone in its modern varieties is one of the brightest flowers of our florists' shops in winter and is a favorite in many southern gardens.

The "lilies by the rivers of waters" (Ecclesiasticus 1:8) are believed to be the Palestine iris which grows along water-courses. The lily of the Song of Solomon 5:13 is, however, a true lily, the scarlet Turk's-Cap lily (*Lilium chalcedonicum*), which is now said to be very rare in Palestine.

Although there are several species of roses native to Palestine, most of the Biblical references are to other plants. In Isaiah 35:1, "... and the desert shall rejoice and blossom as the rose," the reference is to the polyanthus narcissus (*Narcissus Tazetta*) so abundant on the plains of Sharon, and a derivative of which, the paper-white narcissus, is grown in winter in water or pebbles in living rooms everywhere. The rose of Sharon, however, (Song of Solomon 2:1) is one of the common native tulips of Palestine; while the "rolling thing" of Isaiah 17:13, also re-

ferred to in Ecclesiasticus 24:14 as the "rose plant in Jericho," is the resurrection plant (*Anastatica*) which grows in dry places, finally curling up, breaking loose, and then rolling along before the wind.

The Biblical lands have a number of interesting parasitic plants, one of which is the brilliant, crimson-flowered mistletoe, the "burning bush" of Moses (Exodus 3:2), which grows on species of acacia. "... and behold the bush burned with fire, and the bush was not consumed."

The Bible abounds in references to fragrant and aromatic herbs, some of which, or closely related species, are now grown in our own herb gardens, such as anise, cumin, coriander, lavender, rue, and wormwood; also condiments, such as the black mustard.

Plant products burned as incense are especially mentioned in the Old Testament. Myrrh and frankincense (Song of Solomon 3:6) both consisted of hard, lumpy, gummy-resinous substances obtained from trees and shrubs of the *Bursera* family of northeastern Africa. The lumps consisted of dried sap from natural cracks or artificial cuts in the bark. Another substance burned for incense was a resinous exudation obtained from shrubs of the rockrose group (*Cistus*) of the Mediterranean region. This has been identified as the myrrh of Genesis 37:25.

In ancient times before the general use of bathtubs, perfumes and spices made social affairs much more pleasant; spices had, also, considerable preservative value, useful before the days of refrigeration, and for this reason were largely used for embalming.

From the Far East, even in Old Testament times, came cinnamon and cassia. Both were principal ingredients in the preparation of the holy ointment for the tabernacle, (Exodus 30:22-25). Cinnamon was used as a perfume (Proverbs 7:14) and as one of the frankincense plants (Song of Solomon 4:14).

In the Song of Solomon 4:14, together with spikenard, calamus, and cinnamon, "with all trees of frankincense," is mentioned also saffron, a most interesting substance. Saffron consists of the dried stigmas of the white- or lilac-flowered *Crocus sativus* of Asia Minor. It has been gathered for ages. It consists, as now prepared, of an

orange-brown material which, when moistened, gives off a powerful aromatic odor and is used as a perfume or as a spice in foods, and also as a coloring matter. It is said to take more than 4,000 flowers to make an ounce of saffron. The spikenard mentioned in the above reference is *Nardostachys jatamansi* of the valerian family, brought all the way from the Himalayan region. As Jesus (Mark 14:3) "sat at meat, there came a woman having an alabaster box of ointment of spikenard very precious; and she brake the box, and poured it on his head." Judas Iscariot objected to Mary's anointing the feet of Jesus (John 12:5) with spikenard ointment, saying it should have been sold for 300 dinarii (possibly \$50) and given to the poor.

The aloes, "... a mixture of myrrh and aloes" (John 19:39), was derived from the fleshy leaves of certain aloes of east Africa. When breathed upon, it gave off an aromatic, myrrhlike odor.

The origins of many of the food plants mentioned in the Bible are buried in unknown antiquity. Barley and flat-headed wheat (emmer), known in the Bible as "corn," were grown very early in the valley of the Nile; some believe as far back as 5,000 to 10,000 B.C. Besides these grains, there were cultivated in the Old Testament lands melons, radishes, lentils, beans, onions, leeks, garlic, millet, dates, grapes, olives, figs, and pomegranates, and wide use was made of the lotus and of the papyrus.

One of the most interesting food plants of the Bible is manna. In Exodus 16:14 is mentioned a small round thing lying on the ground after the dew was gone, "and when the children of Israel saw it, they said to one another, It is manna." This was one of the lichens (*Lecanora esculenta*) which is said to grow in abundance on rocky places in those regions. When dry, it curls up and is often detached by the wind and blown down into low places in quantity. In times of scarcity it still is used in Arabia and northern Africa as food. A rock lichen of northeastern Canada, known as rock tripe, has been an emergency food.

In Exodus 16:21 it is said, "And they gathered it every morning, every man according to his eating: and when the sun waxed hot, it melted." This is another kind of manna, which is believed to be one of the gelatinous algae called *Nostoc*,

which grows in moist places, often gathering into pellets during the night and thus appearing to arise magically. The writer has seen such pellets in considerable abundance around the sandy margins of ponds on Presque Isle, Erie, Pennsylvania, some as large as marbles.

Still another kind of manna consists of the dried sappy exudations from the bark of the twigs of many trees, such as the tamarisk and the camel's-thorn (*Albaga maurorum*) found in dry places in the Biblical lands and sometimes used for incense. A similar manna is obtained commercially today, mostly from the manna ash tree of southern Europe, but it is mildly medicinal rather than edible.

The prodigal son (Luke 15:16) would fain have eaten "the husks that the swine did eat; and no man gave unto him." The "husks" were the large, thick, and sweet pods, six or eight inches long and an inch or more wide, that we often see in our markets under the name of St.-John's-bread or carob bean. They are the fruit of *Ceratonia siliqua*, a tree of the eastern Mediterranean, and are much used as a food for farm animals.

One writer notes that there are about twenty Hebrew words for prickly or thorny herbs or shrubs which were "indifferently translated in the Authorized Version" as bramble, brier, thistle, or thorn. The Christ or Jerusalem thorn (*Paliurus Spina-Christi*) of Matthew 27:29 is a small thorny tree or shrub with small olivelike leaves common in dry places in Palestine. This is believed to have been the plant used for the crown of thorns.

There are numerous Bible references to trees, the identity of many of which is quite obvious. The "apple" of the Song of Solomon 2:3, however, is the apricot. The fragrant almug, the red sandalwood (*Preocarpus santalinus*), was brought by the navy of Hiram from Ophir (I Kings 10:11-12). The chestnut of Genesis 30:37, strangely enough, is the Oriental plane; the sycamore is the sycamore fig; the mulberry of II Samuel 5:23 is now believed to be either the European aspen or the Euphrates poplar, but, on the other hand, the sycamine of Luke 17:6 is the black mulberry. The forests of the cedar of Lebanon were badly depleted by the "four score thousand" wood-hewers in the mountains. (II

Chronicles 2:18). There now remain but a few small groves of these interesting trees.

Limitations of space do not permit mention of more than a few of the plants mentioned in the Bible, large numbers of which are there inaccurately named, even among the common trees and shrubs.

Among Our Friends

THE brochure, "How To Be an Angel," which was enclosed with the annual Museum report for 1950, attracted much favorable comment in the local press and has already resulted in a number of contributions for specific projects suggested or to be used as the Museum determines. The current list of "Museum Angels," to which, it is hoped, new names may be added each month, includes Kathleen Fillmore, Harrison & Abramovitz, Leland Hazard, F. W. Preston, Mitchell & Ritchey, and Lawrence C. Woods. "Angels" who were listed last month were the Sarah Mellon Scaife Foundation and the Richard King Mellon Foundation.

The Museum stamp collection, which has lain nearly dormant for a number of years, is moving into a period of new activity. The honorary curator, William L. Alexander, with George McElroy, is now making a survey of the collection, and an appeal has been issued to stamp societies and collectors in the Pittsburgh area to lend assistance. Financial help and duplicate stamps are requested, to buy materials and to bring the Museum's albums up to date. Contributions for the Stamp Fund have been made by the following: H. P. Arbuckle, W. D. Canan, Leslie C. Carlson, H. E. Harris, Ernest E. House, J. W. Nichols, Albert J. Schratz, P. Superty, Jr., H. T. Taylor, and J. Milo Torrance.

The Buhl Foundation has made the fourth payment of its generous grant for the publication and distribution of *Wild Flowers of Western Pennsylvania and the Upper Ohio Basin*. This is the standard work with text by O. E. Jennings and illustrations by Andrey Avinoff which will be published jointly by the University of Pittsburgh Press and Carnegie Museum.

Sidney A. Swensrud has presented shares of common stock having sale value of \$907 to the Carnegie Institute Society.

THE BEAT, BEAT, BEAT, OF THE TOM-TOM

By MARSHALL BIDWELL



THERE is something about a constantly recurring drumbeat that pulsates in the blood and stirs us to action; it communicates most directly with the human metronome that beats within us. Since primitive music was mostly rhythm, we naturally find percussions of the drum family to be the oldest of musical instruments. There is a whole family of drums, from the diminutive tom-tom to the huge bass drum, each producing a different sound effect. The most interesting of these is the kettledrum or tympani, as it is now called. Its ancestry can be traced from the eighth century, when the Moors crossed from Africa into Spain with queer drums that looked like two halves of a large ball.

Percussion instruments have always been the lifeblood of the military band. It was not until the seventeenth century, at the time of the French composer Lully, that kettledrums graduated from the military band into the orchestra. They were found to be extremely useful because they were capable of definite pitch which could be changed by tightening or loosening the head. Many concertgoers have wondered why the kettledrum player bends over his drums so often and seems to be whispering to them. He is checking on their pitch and constantly turning thumbscrews, tapping meanwhile to verify the correctness of the new pitch. Some kettledrums are equipped with a pedal to assist in the tuning. There is a range of about an octave.

Before the time of Beethoven, the tympani's function was to add their throb to the excitement of "tut-tis" and they al-

ways accompanied the brass. They were tuned to the tonic and dominant of the key of the composition. It was Beethoven who freed the tympani from their former shackles by giving them solo effects, especially in his *Fifth Symphony*. In his *Ninth Symphony* he went berserk by making the tympanist play two notes of a chord simultaneously on two kettles! The revolutionary Berlioz went even further; in his *Requiem Mass* he produces an appalling effect by employing sixteen tympani played by ten players. This was his attempt to portray the crack of doom. Modern composers use from three to four kettledrums. Some of the finest effects of the drum are produced by its *pianissimo*, which removes the sound to an immeasurable distance, supplying an illusion of vastness. Wagner made use of the tympani to express mystery, solemnity, and awe, as in *Siegfried*, where he prolonged the suspense before some tragic action by using the soft foreboding strokes of the tympani. In Rossini's *Semiramide Overture* the tympani have a tremolo in the first measure, followed by seventy-eight measures of rest. In a case like this some tympanists take their cue



WAYNE PASCUZZI OF THE PITTSBURGH SYMPHONY ORCHESTRA WITH SNARE DRUMS, XYLOPHONE, MARACAS, AND CYMBALS

from the conductor rather than count the measures.

The tambourine and castanets of Spain are the gayer members of the drum family. The tambourine is a miniature drum of very ancient origin. We find it pictured in Egyptian, Assyrian, and Greek mural paintings. More recently it has become associated with Spanish music, since the people of Spain have a great liking for it. The tambourine consists of a membrane stretched on a frame to which are fastened a number of metal jingles. It is played by striking with the hand, or shaking, or both in combination. The castanets are hollow shells, or ebonite, used in pairs, and clapped rhythmically together. The castanet is best known to music lovers through Bizet's opera, *Carmen*.

An instrument which has come down to us from Biblical times is the cymbal. In brass bands the drums are usually accompanied by cymbals, but in symphony orchestras cymbals are used sparingly, for their metallic crash sounds for all the world as if the cook had dropped a couple of dishpans. Their effect is best to cap the climax at the end of a terrific crescendo. The Biblical phrase, "sounding brass and tinkling cymbals," could hardly apply to the present day. The cymbals are discs of brass that are struck together in a stroking motion or are struck with drumsticks. The best cymbals are made in Turkey, where

the natives have been outstanding metalworkers for generations.

Another instrument, like the cymbal but quite different in effect, is the gong, a noisemaker of Chinese origin consisting of a gigantic circular plate suspended in a metal ring and rubbed with a soft-headed stick so that it produces a deep, shuddering roar. It is the most sinister of the percussion instruments. When struck with a drumstick, it gives forth a deafening sound.

The Chinese drum or tom-tom is heard only occasionally in the symphony orchestra but is quite popular in the dance band for pseudo-Oriental effects. It is merely a modern revision of the primitive tom-tom of the savages. We must not forget another instrument of percussion, the triangle. This is a triangular steel rod suspended on a string and struck with a metal stick, producing a high metallic ring. It was about the year 1740 that military bands on the Turkish model, with oboes, fifes, kettledrums, snare drums, bass drums, cymbals, and triangles became the rage in Europe. Haydn, Mozart, and Beethoven imitated Turkish music in their scores, but it was Gluck who, in 1779, used the triangle for the first time.

The bass drum, snare drum, tom-tom, cymbal, triangle, tambourine, castanet, and gong are of indefinite pitch. They cannot play melodies, but merely emphasize

dynamics that give color. We now come to a group of percussions that give definite pitch, as in the case of the tympani. Most of these belong to the bell family. The glockenspiel or orchestra bells consist of metal bars arranged in two rows and, when struck with wooden hammers, give out high bell-like tones. The xylophone is similar except that the bars are made of wood, thus producing a dull, clanking tone. (Saint-Saëns uses it effectively in his *Danse Macabre*.) The marimba has wooden bars like the xylophone, but it has re-



WILLIAM SCHNEIDERMAN AT THE KETTLEDRUMS, AND AT REAR RENZO RENZI, FORMERLY OF THE ORCHESTRA, AT BASS DRUM

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sonators which deepen and prolong the tone, giving it a richer quality. A modern type is the vibraphone, which has a rotating valve that produces a pleasing vibrato. The celesta looks like a small upright piano with a half-sized keyboard, and produces sweet, tinkling tone. Tchaikovsky introduced this instrument into the symphony when he composed the "Sugar-Plum Fairy" of his *Nutcracker Suite*.

Every symphony orchestra has a set of tubular chimes. Composers have frequently wished to reproduce the sound of carillon bells, but their tremendous size and weight made them prohibitive. Fortunately it was discovered that metal tubes an inch or two in diameter and from four to six feet long could furnish a very good imitation of the great church bells. Thus we have the excellent bell effects as found in Tchaikovsky's *1812 Overture* and Moussorgsky's *The Great Gate at Kiev*.

There are other noisemaking gadgets that appear on rare occasions. To read through a modern drum catalogue is like visiting a freak show at a carnival. There seems to be no limit to the queer noises we now hear in the concert hall. No one lifts an eyebrow at a steamboat whistle, gunshot, cuckoo call, rooster crow, or dog bark. But we reach the utmost in caricature or absurdity when we resort to such "effects" as hen cackle, duck quack, mosquito buzz, monkey chatter, and cow bawl! With the advent of the jazz band, the "rhythmic-noise" department came into its own. Now anything became pos-

sible—the Chinese wood blocks, the rustling tin sheet, the thunder stick, the swishing wire brushes, and even, as in Satie's *Parade*, the tapping typewriter. Schönberg, in one of his *cerie* works, calls for "some big iron chains."

The percussion section is, in many respects, the virgin field of music, and further developments are likely to follow.

Through the generosity of the H. J. Heinz Company, the Carnegie Music Hall organ has recently acquired a whole family of percussions, including the following: tympani, snare drum, bass drum, tambourine, Chinese drum or tom-tom, castanets, cymbals, triangle, Chinese gong, xylophone, vibraharp, and piano. Most of these are prototypes of the instruments described above.

The organ percussions are produced by the instruments themselves being struck by some form of pneumatic hammer, instead of by hand. The harp in the orchestra is not a percussion instrument, while the organ "harp" is a celesta made of steel bars with resonators and struck by pneumatic hammers. The vibraharp is built on the principle of the orchestra vibraphone and is a very beautiful effect. The Chattering grand piano is operated from the organ keyboard, and the expression is controlled through a pneumatic mechanism.

There is some precedent for the use of kettledrums in an organ. Burney, the English historian, describes an organ in a Berlin church which had the most curious ornaments on the case, including a kettledrum which was beaten by an angel placed behind it, whose motion the organist regulated by a pedal. The glockenspiel is found on German organs of Bach's day, and the great master himself authorized its use.

Obviously such "traps" would be out of place in a church organ, except the harp and chimes. Even these did not come in without a struggle. It remained for the theatre organ to popularize percussion tone. As for the concert organ, there are occasions in organ transcriptions when some of these can be legitimately used, especially in pieces of an Oriental nature or those compositions written for military band. Unquestionably these additions will create some novel effects and promote further interest in the recitals given on Sunday afternoons in Carnegie Music Hall.

Dr. Bidwell opens his twenty-first season as organist and director of music at Carnegie Institute on October 7. His Sunday-afternoon organ recitals, under sponsorship of the Arbuckle-Jamison Foundation, hold a unique place in the busy musical life of Pittsburgh. Each season Dr. Bidwell plays some five hundred compositions, his extensive repertoire being revealed by an annual program book annotated by him.

Along with his work in this city, where he is also organist and choirmaster at the Third Presbyterian Church, Dr. Bidwell has made numerous appearances in other cities this past year. These include the National Institute of Church Music and the Washington Cathedral, Washington, D. C.; the Mormon Tabernacle, Salt Lake City; and in New York, Los Angeles, Saint Paul, Indianapolis, and Knoxville, Tennessee.

A native of Massachusetts, Dr. Bidwell was graduated from the New England Conservatory of Music, and later studied under Widor at Fontainebleau. He spent twelve years as organist at Coe College, Iowa, and then won the Institute appointment in open competition.

Fossil Parade

"DIPPY" CRASHES ROYALTY

BY ARTHUR S. COGGESHALL



*The crowned heads of Europe
All make an awful fuss
Over Uncle Andy
And his old Diplodocus*

This little ditty was inspired by the hero of our true story. "Dippy's" fame began to spread very early, long before his skeleton was mounted, yes, even before *Diplodocus carnegiei* was first described by J. B. Hatcher in 1901. A water-color sketch of "Dippy" by W. J. Holland, which caught the eye of King Edward VII of England while on a visit to Andrew Carnegie at his Skibo Castle home in Scotland, was to start our hero on his fabulous ventures into all the great court circles of Europe and on to South America.

Could the King not have one of the monstrously strange creatures for England's British Museum in London? Neither King Edward nor Mr. Carnegie knew that one might explore for many years and perhaps never again find a dinosaur skeleton even half so complete as those in Pittsburgh. Naturally Mr. Carnegie wanted to please a king, and so the crashing of royalty by "Dippy" began.

Mr. Carnegie immediately got in touch with Dr. Holland, then director of Carnegie Museum, and the wheels were set in motion. After much correspondence and many conferences, it was decided to make moulds of the bones of the original *Diplodocus* and cast a replica of "Dippy" for the English king.

Here the foresight of Dr. Holland evidenced itself. With thoughts of future visits abroad in which he would introduce "Dippy" to all European royalty, he directed me to make six duplicates of the original skeleton of *Diplodocus carnegiei*.

A crew of Italian plastermen skilled in casting statuary was secured, with Serafino Agostini as leader, and the really stupendous work of making piece moulds and glue moulds of each section of the skeleton was begun. Two years were consumed in

this work for, as one can imagine, the making of the intricate piece moulds and then six duplicate casts of each bone was no small job. Add to this the fact that the fossils, though very heavy, are fragile, especially the vertebrae, and the procedure in casting is quite slow. All this work was done in the rooms now occupied by the printing department of the Institute, for the new enlarged building was not even in the design stage.

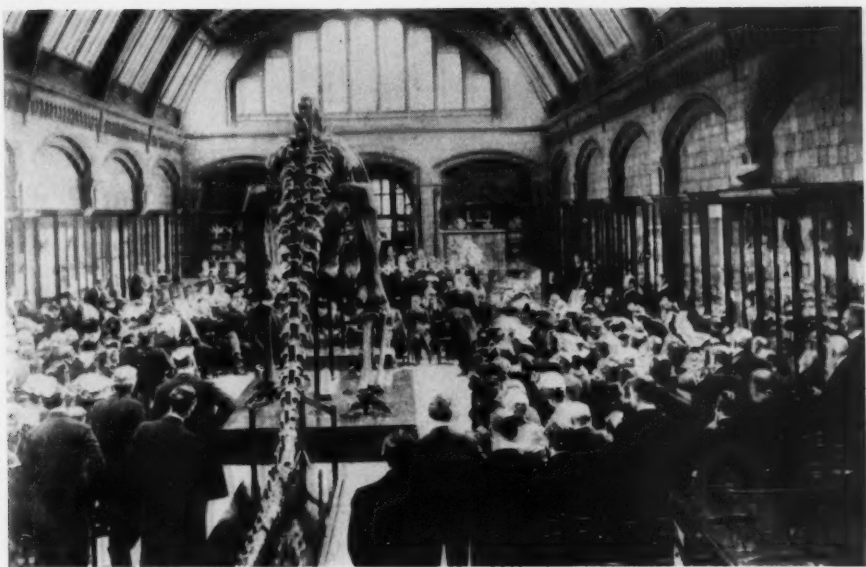
Mounting King Edward's *Diplodocus* was the next problem. The only available building with an eighty-foot space floor was the old Pittsburgh Exposition Building at the Point. There the first *Diplodocus* replica was erected by myself and two assistants, L. S. Coggeshall and Mr. Agostini. After dis-assembling and boxing, "Dippy" was on his way to meet the King and become one of the sights of London.

Upon arriving at the Natural History division of the British Museum in London, I handled the work of mounting "Dippy" with the assistance of members of the staff of the British Museum, while Dr. Holland did the ambassadorial work in arranging for the grand opening where "Dippy" would be the "admired of all admirers." As the work neared completion, many of the royal family came to see and wonder at the hugeness of the skeleton of this giant reptile.

The presentation to the King was made by Mr. Carnegie in person and accepted by Lord Avebury on May 12, 1905. A very distinguished group of scientists from many fields was there, including Sir Edward Ray Lancaster, director of the Museum, and Arthur Smith Woodward,

Dr. Coggeshall was in charge of work with dinosaurs at Carnegie Museum from 1899 to 1929. For the past fourteen years he has been director of the Santa Barbara Museum of Natural History in California.

Next month he will continue his story of introducing the Carnegie Museum's famous *Diplodocus carnegiei*, more familiarly known as "Dippy," to European crowned heads back in the early 1900s.



THE FIRST REPLICA OF DIPLODOCUS PRESENTED TO THE BRITISH MUSEUM (1905)

former director. The list of those in attendance read like the Royal Blue Book.

Thus "Dippy" was well on his way to crashing royalty all over Europe and being received with highest honors everywhere—and like other celebrities, "Dippy" was hailed by the cartoonists.

Kaiser Wilhelm II of Germany was the next monarch to ask Mr. Carnegie for a replica of his namesake, to be erected in the Museum für Naturkunde in Berlin. This Museum proved to be one of the poorest and least interesting of any on the continent, mainly because the exhibits were built and installed by old army sergeants who had never been trained in the work. Another feature that was not appreciated was the interference of one of the paleontologists, G. Tornier, who insisted that the position of "Dippy," as set up, was too mammal-like. However, we were able to convince F. von Huenie, leading paleontologist of Germany, of the correctness of our mount. The Kaiser was

interested, in his stiff German manner, and voiced his approval of Mr. Carnegie's gift.

In 1908 Germany was preparing the army and navy for the "big push" of 1914 against England and France. An English name such as mine meant a spy, so when

Dr. Holland, an excellent German scholar, registered me as a paleontologist, it must have suggested a new camouflage for an English spy. When I moved from the Hotel Bristol on Unter den Linden to another hotel near the German foreign office, the German Secret Service got busy. Returning to my hotel one afternoon, I was met by a Secret Service man. A trip to his headquarters was begun.

On their arrival, the officials insisted that German be spoken. I in turn insisted on English, so I was shown into the presence of the high and mighty head of the Secret Service who spoke English. Now began an interesting exchange of questions and answers.

"You are English?"

"No, I am American."



"SPEAK!"

CARTOON, EARLY 1900's

"Who was your father?"
"Never mind my father. What do you want of me?"

"What was your mother's name?"

"That does not matter."

"I must know your father's name."

This sort of questioning continued for about thirty minutes, with the Secret Service officer always returning to "Who was your father?"

After a long time came the question, "What are you doing in Germany?"

"Working."

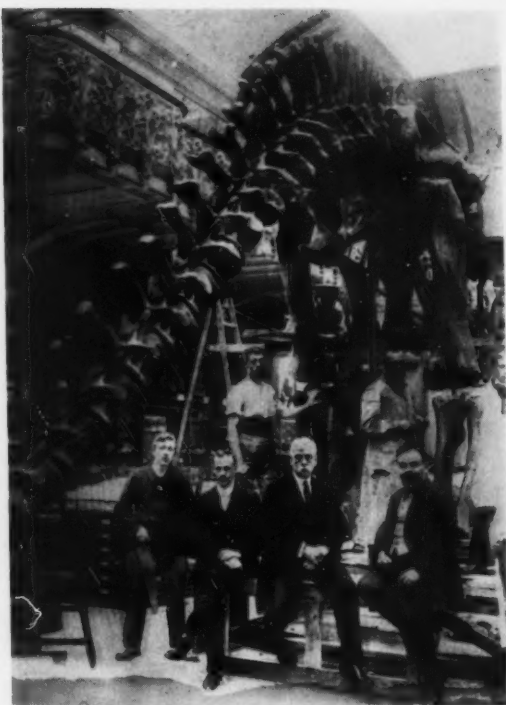
"Then what does this mean?" and he pulled out the card on which Dr. Holland had written "Paleontologist." To the Secret Service this was a new kind of spy and, as my name is English, I was obviously a new type of English spy. But "Paleontologist"—that was too much even for the Secret Service.

For answer I produced the card which had been given to each of us when we first reported at the Museum, explaining our work and signed by the Kaiser. There was instantly a click of heels as the interrogator came to attention, saluted, and insisted that it was all a mistake and "Please do not mention this."

As I was escorted to the door by the head man, the office force clicked, saluted, and looked amazed. How did I feel? How would any young American feel who could thumb his nose at the German Secret Service and get away with it?

Kaiser Wilhelm was so pleased with "Dippy" that he immediately had decorations bestowed, but they were returned during the first World War when feelings against the Germans were at their height.

President Fallières of France made an appeal to Mr. Carnegie for a replica of "Dippy" for the great Museum of Natural History in the Jardin des Plantes in Paris. Dr. Holland's acquaintance with Dr. Boule was responsible for this gift. Dr. Boule was the director of the French museum and knew Dr. Holland as an entomologist from Holland's *Butterfly Book* and



"DIPPY" ONCE APPEARED ON A FRENCH POST CARD WITH
DRS. COGGESHALL, HOLLAND, AND BOULE SHOWN SEATED

as the director of Carnegie Museum. Memories of previous visits to Paris moved the Doctor to suggest to Boule that Mr. Carnegie would be pleased to send a replica to France if President Fallières would make the request.

The presentation here was very impressive, with the French President himself in attendance. Decorations and kisses were bestowed on "Dippy" and his trainers. Dr. Holland especially enjoyed his role of ambassador and representative of Andrew Carnegie, and used his knowledge of French to advantage. "Dippy" made the post-card windows of the Paris boulevards.

I made many friends and found the Museum of Natural History to be a really wonderful organization. During the First World War the Museum was converted to a hospital. "Dippy" was dismantled but later remounted and still stands supreme—one of the sights of Paris.

(To be continued)

WHERE THE WILD HYACINTH GROWS

By HELEN M. BLAIR



THE Botanical Society of Western Pennsylvania held its first meeting in the autumn of 1886. Thus sixty-five years ago, twenty-one men and women met to form a Society whose purpose was: "To bring together people who are interested in botany and in nature and flowers generally and to encourage the study of this science, for it is believed that if the purposes and prospects of the Society were more generally known, there would be found in Pittsburgh and vicinity many persons whose love for flowers and plants would prompt them to become members."

Today when we have Carnegie Institute and its meeting rooms, chairs, tables, moving pictures in natural color, blackboard to illustrate the lectures, a kindly curator of plants—LeRoy K. Henry—to answer our questions, and the great herbarium of dried specimens, it is quite a contrast to think back to the days when there was nothing. Those people had nothing but a desire to learn and incidentally to enjoy the companionship of others with the same desire.

The difference between our situation and theirs may be seen from the minutes of the early meetings. In 1887 the Society voted \$36 to pay for a herbarium case. At this time Professor Jackman exhibited a flower press from Mr. Queen of Philadelphia, to show how flowers could be dried and preserved. The next year members raised \$330 to buy cases to hold books and specimens. Later, chairs, tables, carpet, and picture frames were provided by members.

The early meetings were held in the Fourth Ward School. Later The Academy of Science and Art invited the Society to meet in the old Thaw mansion across from Horne's store. Then meetings were held in the Carnegie Lecture Hall in Allegheny. Fifth Avenue High School housed the meetings for some time until the Carnegie Library in Schenley Park was built. When the present Carnegie Institute was com-

pleted, Andrew Carnegie wished to bring together The Academy of Science and Art, the Microscopical Society, the Botanical Society, and all other such organizations in the new building. For this he was made an honorary member of our group.

In 1899 the Society presented to the Carnegie Museum twenty thousand plant specimens which it had collected or bought. At the first meeting in the herbarium at the Museum, the president, F. Z. Shellenberg, gave a talk on ancient botany, Mrs. O. E. Jennings sang, and Dr. Jennings reviewed the progress of botany since 1886.

The November meeting in 1903 was on the timely subject of "Nuts." The speakers were: Anna Deens, on "What Is a Nut?"; Adolph Koenig, on "Medical and Vegetable Properties of Nuts"; V. P. Medsger, "Nuts Native to Pennsylvania"; Mr. Stephenson, "Nuts from a Commercial Point of View"; Professor Fisher, "Nuts and the Small Boy"; H. N. Negley, "Some Other Nuts." This last was a collection of nuts from all over the world, and after exhibiting it, Mr. Negley passed a plate of delicious dough-nuts.

This was not the only time that members had a chance to taste their specimens. Here are a few examples: Mrs. Jennings invited members to share in jelly she had made of haws she and Dr. Jennings had collected in Schenley Park. Dr. and Mrs. A. E. Ortmann brought in bread made from wheat, oats, corn, and rye. Ellwood H. McClelland and his wife passed around a box of crackers, a spoon, and glasses of jelly made by Mrs. McClelland from the berries of the *Hercules*-club.

In 1908 a symposium on the economic plants of Phipps Conservatory covered

Miss Blair, a graduate of the University of Pittsburgh, taught gardening in Homewood and Linden Schools, became the first director of the Pittsburgh Garden Center, and is now a professional gardener.

She is chairman of the membership committee of the Botanical Society and a member of the Audubon Society and the Linden Garden Club.

such subjects as Fiber, Starch, Rare Woods, Spices, Sugar, Fruits, Narcotic Beverages, and Medicinal Plants. William Falconer, the gardener who planted Schenley and Highland Parks, was president at this time.

A meeting on the "Flowers and Plants of the Bible" brought out Bishop Whitehead, Dr. Leak, Dr. Shafer, Dr. Shillito, and Dr. Martin. Seeds were sent from Beckert's, and Charles Davis exhibited fruits. The Missouri Botanical Gardens sent a large assortment of dried specimens of plants mentioned in the Bible.

The first field meeting of the Society was held in Aspinwall, the second at Darlington. Salt Works Station, on the Baltimore and Ohio Railroad, was another old collecting ground. A reporter from the *Pittsburgh Leader* wrote about this trip. He begins, "Latin beside him, Latin behind him, Latin forinst him." The Society members found a plant they called Asclepias, but it was just milkweed to the reporter. Other plants found were false and true Solomon's seal, bellwort, and squirrel corn.

One of the highlights of the Society's weekend trips came in 1905. The Botanical Club of Philadelphia, the Tory Botanical Club of New York, the Biological Society of Washington, D. C., and our Society met in Ohio. Members walked along the Youghiogheny River to see the rare *Marshallia*, iris *verna*, *Trautvetteria*, sweet azalea; climbed steps above the falls to find the leatherleaf, and came back to dinner at the hotel. In the evening they played games and danced the Virginia reel.

This outing was reported by the *Gazette Times* with appropriate cartoons. There was one of members, long and short, in overalls and boots, giving the club yell: "Cimicifuga, cycloloma, fungi, callitrichaceae." Of course, we may take this with a grain of salt, as did the *Gazette* raccoon. He stands in the cartoon with a mushroom over his head and says, "Oh Fungi!"

Now, what of the future? Perhaps some of our old friends or a new member of our Society may turn up some of the little-known plants which have been recorded for our vicinity and have not been found since. One plant has been found just recently. It is the shooting star (*Dodecatheon meadia*). It is a beautiful pink, lilac, or white, fragrant flower that used to grow

at Thorn Hill. Through the co-operation of Dr. Henry, Edgar T. Wherry, W. E. Buker, and David Berckheimer, of Reading, it has been located in Bedford County.

Mertensia, the Virginia bluebell, grew down near Beaver in great profusion. Word went around that a golf course was to be constructed there. The *Mertensia* would be lost. The botanists went down in trucks and cars and brought back quantities of the plant for our parks and private homes. It is still growing where it was planted.

Blue-eyed Mary (*Collinsia verna*) covered the hillside at Mayview with a pale blue carpet, but lumbering has thinned it. The wild hyacinth (*Camassia esculenta*) grows near Large. Does anyone know where else it can be found? How many people know that cactus has been growing and blooming on a shale hillside near Oakdale for many years—wild, yellow-flowered cactus? Would you recognize a wild petunia if you saw one?

In the next *Trillia*, our Society bulletin, Dr. Jennings has listed a number of these rare plants that he would like us to find for the herbarium at the Museum. He and Mrs. Jennings have worked for many years to bring our Society to its present state of efficiency. We all hope to do something to reward them for their efforts. When we look back over the years and realize the labors of all our officers who have put in many hours of tedious bookwork so that we may enjoy the pleasant companionship of our meetings and field trips, we say: "Thank you a thousand times."

HITTING THE LINE

(Continued from page 264)

reasonably strong rivalries with schools at its own athletic level, the games are exciting for the team, students, alumni, faculty, and for other fans interested in witnessing football played for fun.

All Carnegie wants to do is put out top-notch engineers and delineators of the fine arts through its nationally-heralded Carnegie Plan of Professional Education. It takes its intercollegiate athletics in measured doses. In the light of what is happening in the world of intercollegiate athletics, it looks as though Carnegie is definitely on the right track in its present athletic policy.

From Our
PERMANENT COLLECTION

FIFTH AVENUE IN WINTER

By Childe Hassam
(1859-1935)



It is always good to come on a picture in the permanent collection about which friend and foe agree as to its merits as a painting. One such picture is *Fifth Avenue in Winter* by Childe Hassam. This canvas takes on added significance at the present time because of its relation to Impressionism, a school of art which will have adequate representation in the exhibition, FRENCH PAINTING: 1100-1900, at the Institute from October 18 through December 2. Impressionism came to the United States by way of Theodore Robinson, John Twachtman, and Childe Hassam.

Fifth Avenue in Winter is a small but important painting. It is oil on canvas, 28 inches in width by 22 in height. It is signed in the lower left "Childe Hassam, New York," but not dated. In all probability it was painted in 1892. *Fifth Avenue*

in Winter was one of four paintings by Childe Hassam in the fourth INTERNATIONAL at Carnegie Institute in 1899. It was considered for honors in that exhibition but was held ineligible because it had been completed before 1894. Otherwise, because of the competence, the maturity, and the perfection of his early style, the painting might very well be dated the year in which it was exhibited. At the close of the show the picture was purchased from the artist for the permanent collection. It was immediately lent to The Pennsylvania Academy of the Fine Arts for its SIXTY-NINTH ANNUAL EXHIBITION, and from Philadelphia it was shipped to the PARIS EXPOSITION of 1900. It has traveled to many other shows in the intervening years, including the BUDAPEST EXHIBITION of 1929 and the VENETIAN BIENNIAL of 1930.

As the title indicates, the scene is Little Old New York of the nineties. The location is Fifth Avenue and Seventeenth Street. It is late afternoon on a snowy day, and there are not many people on the sidewalks. The street, however, is busy with carriages and horse-drawn buses, which are crushing the snow and turning it from a glistening white to a light-brown slush. The coldness is conveyed by the efforts of the pedestrians to shelter themselves from the elements. The street is lined on both sides with the brownstone mansions and clubhouses of New York in the nineties. The painting demonstrates how sensitive the artist was to the temperamental atmosphere of a place. It also shows how Hassam could create design by color. As this canvas conveys, Hassam's paintings were not only studies of light, but pleasing evocations of well-liked places in Paris, London, Boston, above all New York, and, much later, New England. The artist continued through his long life to be fascinated by New York and to portray its streets, squares, and parks. He once remarked, "New York is the most wonderful and the most beautiful city in the world. All life is in it." He began to paint it with *Fifth Avenue in Winter*, carried on through his picture *Allies Day*, which was awarded an Altman Prize in the 1918 exhibition at the National Academy, and on to *A New York Winter Window*, 1934, the last but one of his paintings in an INTERNATIONAL.

Childe Hassam had a notable record at Carnegie Institute. He was represented in the INTERNATIONAL from the beginning in 1896 through 1935. In these years he showed ninety of his paintings in the annual exhibitions alone. In 1910 there was a one-man show of thirty-five of his paintings in the INTERNATIONAL of that year. He was awarded Second Prize in 1898 for *The Sea* and Third Prize in 1905 for *June*. He served on the juries of award in 1903, 1904, and 1910. In addition to two paintings in the permanent collection (*Spring Morning* was purchased in 1909 from the INTERNATIONAL), the Carnegie Institute owns twenty-four drawings, thirty-three etchings, and thirty lithographs by Childe Hassam. The Institute, therefore, possesses examples of the artistic expression of this great American Impressionist in all the media in which he worked.

In commenting on Childe Hassam's special mission in art, and this comment might very well apply to *Fifth Avenue in Winter*, his friend and fellow artist, Edwin Howland Blashfield, wrote: "Childe Hassam's art career was not only a fine one in the usual sense, but also in a rather special one. Beginning in the days when light—the light of outdoors—focused the interest of the leaders in studios of Europe and America alike—he never, in more than forty years turned away from his best-loved problem of 'let there be light'—light direct, transmitted, diffused or reflected—in a word, brightness or radiance. It was not radiance against gloom, as in Rembrandt—light striving to penetrate darkness—but always sparkle, light impinging; almost, if any one may use relatively trivial words, spotting and sprinkling his house and people, his land and water."

—JOHN O'CONNOR, JR.

ORCHIDS

MRS. HOWARD HEINZ has presented to Carnegie Institute the four volumes of the publication *Reichenbachia*.

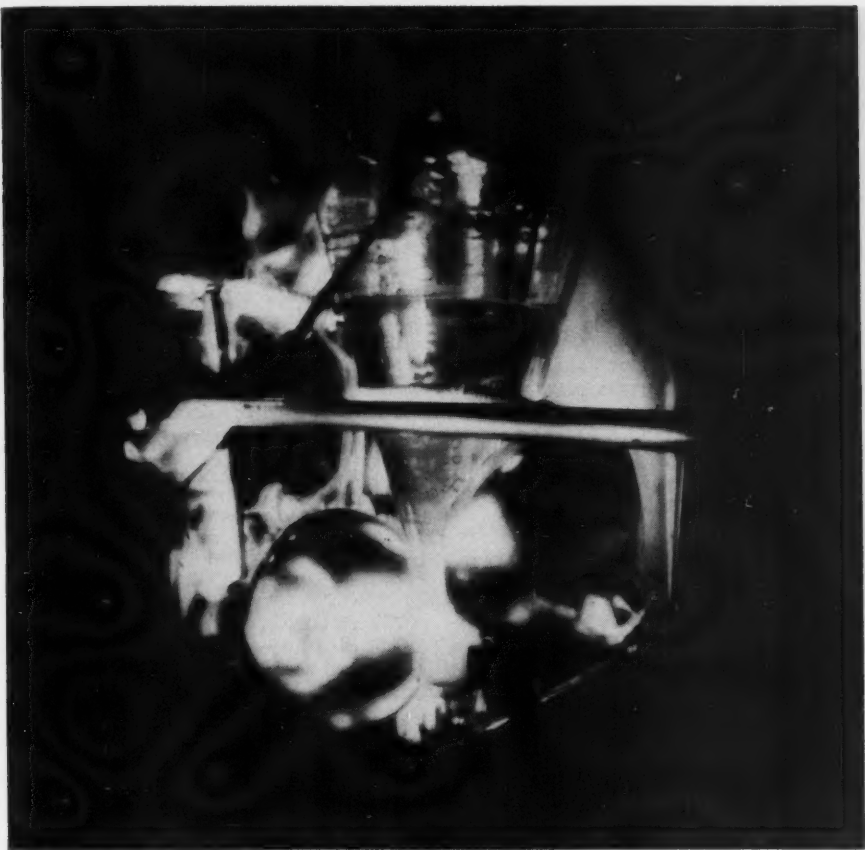
This sumptuous folio publication, which appeared at two-year intervals from 1888 to 1894, was named in honor of the German botanist Heinrich Gustave Reichenbach (1823-89), who early devoted himself to the study of orchids and, after the death of John Lindley in 1865, became the leading authority on tropical orchids.

Reichenbachia was published by subscription by Frederick Sander, of F. Sander & Co., Growers and Importers, at St. Albans, England, with representatives in Berlin, Paris, and New York.

The four volumes of *Reichenbachia* contain 192 folio-size, beautiful color plates, reproduced by chrome-lithograph from water colors, and showing the orchids natural size. Each plate is accompanied in the first two volumes by a Latin diagnosis by Reichenbach himself, and by a general description and culture directions by Sander, in English, French, and German. After the death of Reichenbach the Latin diagnoses were contributed by R. A. Rolfe, of the Royal Gardens at Kew.

Aside from its great value as a reference, *Reichenbachia* is the most de luxe work extant on the orchids.

—O. E. J.



THIS PICTURE WAS TAKEN through a foot of steel with the help of a periscope mounted in the 11-ton steel doors of one of the new "hot cells" for atomic research at Brookhaven's hot lab. The vessel in the picture is filled with a solution containing uranium. The infra-red lamps grouped around the vessel are used to heat the solution. Brookhaven's hot cells, built for experiments too hot to handle by ordinary laboratory methods, are lined with U·S·S Stainless Steel, and backed by concrete walls three feet thick. Only steel can do so many jobs so well.



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UNITED STATES STEEL

THE NATURALIST'S BOOKSHELF

By M. GRAHAM NETTING
Assistant Director, Carnegie Museum

AUTUMN MISCELLANY

HOW TO KNOW THE AMERICAN MAMMALS
By IVAN T. SANDERSON.
New American Library, New York. 1951.
170 pages, 183 illustrations.
\$.35

DEVELOP a greater sympathy for individuals accused of being slow to learn, as evidences multiply that great corporations and industries can be oblivious to the obvious. Popular books on natural-history subjects have long commanded a good sale in Germany and the British Isles, yet American publishers are belatedly discovering the existence of a similar market in the United States. Furthermore, inexpensive paper-bound reprints, long popular in France, and certainly eminently suitable for the traveler or for the apartment-dweller with limited bookshelf space, have only recently been issued in this country with an adequate selection of titles. One of the most recent Mentor books, *How to Know the American Mammals*, affords convincing proof of the public demand for well-illustrated, inexpensive identification manuals, for it has jumped into the nonfiction best seller rank almost overnight. (This rating may include sales of the hard-cover edition, with additional illustrations, published by Little, Brown & Co.)

Inside covers and adjacent pages are devoted to a series of drawings of animals' tracks. The text is divided into some eight sections, with first a brief explanation of what mammals are and where they are found, followed by chapters on ancient, flesh-eating, hoofed, leaping, gnawing, and aquatic mammals. A brief terminal chapter is devoted to the more important introduced and domesticated mammals. The book is illustrated throughout with drawings by Sanderson, whose artistic ability certainly matches his skill as a writer. There is a brief but satisfactory index.

This is a worthy companion to previous

Mentor nature books, Peterson's *How to Know the Birds*, and Stefferud's *How to Know the Wildflowers*. I hope that the publishers have a comprehensive plan for the expansion of this series until all major biological categories are covered. What a boon it will be to nature study when it becomes possible to carry in knapsack or automobile a basic reference library of ten or twelve titles, measuring only five or six inches in length and representing an investment of only a few dollars.

THE REPTILES OF OHIO, 2D EDITION
By ROGER CONANT.
University of Notre Dame Press, Notre Dame, Indiana. 1951.
284 pages, 27 plates, 77 maps.
\$3.50.

The first (1938) edition of this work proved to be so accurate and convenient a herpetological reference that constant demand on the part of residents of Ohio and zoologists elsewhere dictated republication. Since cost factors, always a serious problem with scientific publications which have a limited sale at best, precluded a complete revision, a novel compromise was effected. The major portion of the original text, with typographical errors corrected, was reproduced inexpensively, but exceedingly well, by photo-offset, while the plates were reprinted from the original engravings. A revisionary supplement incorporating all new data accumulated in intervening years, a supplemental list of references, a completely new set of distribution maps, and a combined index to both old and new portions were prepared by Mr. Conant and printed in the conventional fashion. (In the new letterpress section many letters, and, occasionally, entire words are so carelessly printed that even those biased in favor of the ancient art are forced to admire the beautiful clarity of the offset section.) Both sections of the work are bound together in a stiff and serviceable cover.

No herpetologist in this country is more meticulous about tracking down questionable records and searching out specimens in scattered collections than Roger Conant. In consequence, the species discussions, the lists of locality records, and the set of new and improved distribution maps make this report one of the most reliable state surveys presently available. The grouping of these maps at the end of the supplement, although an economy measure, has distinct advantages, for it facilitates rapid comparison of vastly different distribution patterns. Incidentally, the nonprofessional users of this book will do well to begin at this point and work forward, for the most up-to-date information is naturally contained in the supplement and each discussion or map therein is keyed back to the preceding original text.

When Neil Richmond and I complete the recently inaugurated Pennsylvania Herpetological Survey I hope the users of our report will deem it as authoritative and useful as Conant's *Reptiles of Ohio*.

OUTDOOR ADVENTURES

By HAL H. HARRISON.
Vanguard Press, New York. 1951.
128 pages, 116 photographs.
\$2.75.

Pittsburgh may take real pride in the fact that one of the most informative and attractive children's books of recent issue is the work of a local author-photographer. The fifty-one adventures are not, I am happy to report, accounts of dangers encountered by intrepid youngsters. They are, instead, mostly commonplace natural-history experiences, arranged seasonally, which might befall normally curious children in their own backyards, in city parks, or in nearby forests. Adults too dignified to belly-flop in tall weeds on a vacant lot have probably forgotten the high thrill of discovering a baby rabbit crouched beneath vegetation, of first witnessing a toad lapping up insects with machine-like regularity. Harrison writes so interestingly of neighborhood natural history, however, that I think many parents may be tempted to see how many of these adventures they can enjoy with their children.

Each episode occupies two pages, one of entertainingly written text and a facing

page of illustrations, usually showing George and Gretchen Harrison acting out the experience plus one or two close-ups of the plant or animal subject. Incorporated in each account is a considerable amount of sound nature lore. (Most of the manuscript was scrutinized by Carnegie Museum specialists). How many readers know which coin weighs more than a hummingbird, an easy way to differentiate blueberries and huckleberries, which animals "file" their food, what bird shirks family responsibilities until July, which insect eggs sound like rain as they drop from the trees, how many seeds one crabgrass plant releases on a nice lawn, or which plant extracts gold from gold-bearing soil?

Harrison's fine pictures have been reproduced with care, and the publisher is to be further complimented upon the attractive format and the inclusion of an index.

BIRDS OF MONTEZUMA CASTLE AND TURIGOOT NATIONAL MONUMENTS

By HENRY H. COLLINS, JR.
Southwestern Monuments Association, Santa Fe.
1951.
16 pages, 7 colored and 21 black and white illustrations by Roger Tory Peterson.
\$.25.

Naturalists are such enthusiasts that they frequently give their listeners or readers mental indigestion by providing a superfluity of information. Collins believes that the average park visitor has a potential rather than a developed interest in nature and that a homeopathic dose at each park is best for those not already burning with nature fervor. This pamphlet, the first of a projected series, will enable a touring family to recognize a number of the common birds of the area and to try a bird quiz in lieu of radio entertainment. Finally, since it ends with a letter describing Montezuma Castle and Well, it requires only address and stamp in the designated places to function as the letter everyone is too busy to write.

The basic idea is good, the medley of information included worthwhile, and the check list of birds of the area useful to advanced bird watchers. The Peterson illustrations, although not too well printed, add greatly to the attractiveness and usefulness of the pamphlet.

From far Places

● Slumbering in the heart of each piece of ivory is an image awaiting the sculptor's knife to bring it into being. Some figures emerge unrelated to the material from which they spring. Others seem born of its form and substance. This cribbage board, made of a walrus tusk that has been mounted, buffed, and incised, is the ultimate in direct use.

● In the far north, where the walrus and narwhal abound, the Alaskans worked such tusks in a simple, forthright manner. Ivory being a tough and lasting material, was generally reserved for useful objects. But the strongly decorative impulse, apparently inherent in the people, just naturally produced functional pieces of interest, realism, and restraint.

● Scrimshaw, the technique with which this tusk is decorated, was a favorite pastime among the natives and icebound whalers whiling away the arctic night. Such work, done mostly in the nineteenth century, was often highly pictorial—like this dog-sled team mushing its way across the snow, the flock of ptarmigans feeding on the tundra, the long boat cruising among icebergs. Today narrative pieces like this provide ethnographers with valuable insight into the ways of primitive people.

● In the world of good eating the beautiful is also generally useful. Fine food not only nourishes the body, but it delights the eye and gratifies the palate. Perhaps in no area of cooking has this tripart function been so well developed as in prepared foods like the 57 Varieties. Gardeners and farmers, scientists and chefs, process engineers and home economists pool their skills and knowledge to produce the great soups, the oven-baked beans, the jellies, pickles, and condiments that compose the famed Heinz line.

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When the birds fly south—



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